progression-free (PFS) and overall survival (OS) and correlation between hematologic and organ response.

Results: Median age at auto-HCT was 59 years (range, 41-74). Median time from diagnosis to auto-HCT was 6.6 months (2.2-121.9). Additional visceral organs involved were: heart 5 pts (9%), GI tract 3 pts (5%), peripheral nerves 1 pt (2%) and liver 5 pts (9%). Median baseline 24-hour proteinuria was 5.055 grams (range, 0.17- 27.85 grams). All pts received melphalan or melphalan-based combinations as their preparative regimen. Median time to neutrophil engraftment was 10 days (range, 7-15). Median follow up from auto-HCT was 24.5 months (range, 0.4-132). Six pts died of non-relapse causes with a non-relapse mortality (NRM) at both 100 days and 1 year of 10.9%. Fifty pts were evaluable for a hematologic response, while 5 patients were inevaluable due to early death. Eight pts (16%) achieved complete remission (CR), 10 (20%) achieved a very good partial remission (VGPR) and 21 (42%) achieved a partial remission (PR), with an overall response rate of 78%. Organ response was evaluated at 6, 12, and 24 months, and was defined as a $\geq$50% decrease in total proteinuria over 24 hours without an increase of $\geq$25% of serum creatinine. Organ response was demonstrated in 8 (17%) of 47 evaluable pts at 6 months, in 11 (29%) of 38 evaluable pts at 12 months, and in 12 (44%) of 27 evaluable pts at 24 months, respectively. Organ responses at last follow up were seen in 12 of 28 pts with $\geq$ hematologic PR and 0 of 11 pts with $<$ hematologic PR ($P = .008$). Two pts who were hemodialysis-dependent pre auto-HCT remained on dialysis after the auto-HCT. Median PFS and OS were 43.1 and 69.9 months, respectively. Kaplan-Meier estimates of 3-year PFS and OS were 62% and 73%, respectively (Figure 1). At the time of last follow-up, 37 pts (67%) were alive and in remission.

Conclusions: High-dose melphalan and auto-HCT is associated with durable hematologic and organ response, and long OS in patients with AL and renal involvement. Achievement of hematologic response is highly predictive of a renal response.

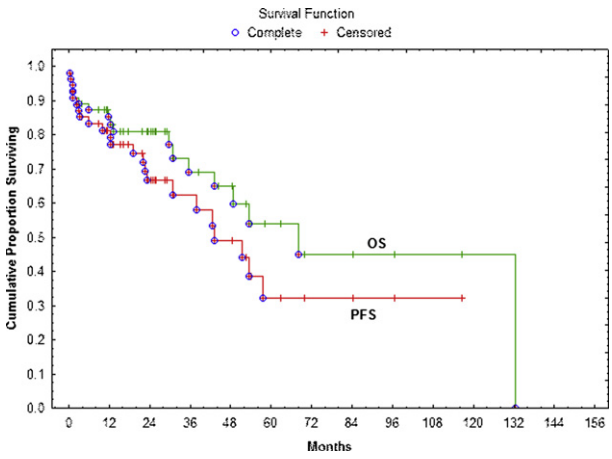

Figure 1.

245

Plasma Cell CD20 Expression: Primary Aberrant Expression or Receptor Up-Regulation

Yasser Khaled [1], Megan Fondaw [2], Jason Balls [2], Tori Smith [2], Melhem Solh [3]. [1] Blood and Marrow Transplant program, Florida Cancer Institute, Orlando, FL; [2] Florida Center for Cellular Therapy, Orlando, FL; [3] University of Minnesota, Minneapolis, MN

CD20 is a trans-membrane protein expressed on mature B cells through all stages of their development. However, its expression is down regulated at the point of differentiation into plasma cells and expressed only in 16-22% of mature plasma cells. CD20 expression on plasma cells has been described with both favorable prognosis in association with translocation t(11;14) and unfavorable prognosis in association with plasma cell leukemia. The incidence of CD20 expression on plasma cells from patients with relapsed/refractory multiple myeloma is not well stated in literature and not routinely done in this patients' population. Additionally, it is not known if CD20 represents a primary aberrant expression in newly diagnosed cases of multiple myeloma or possibly represents a secondary genetic change at the time of relapse related to hypothesized myeloma stem cells.

In order to study the above questions, we retrospectively reviewed the medical records of 92 patients with symptomatic MM who underwent ASCT between January 2008 and December 2011. As of July 2012, 38 patients have relapsed. Bone marrow biopsy and flow cytometry results were available for 33 patients at time of diagnosis and relapse. CD20 expression was positive on plasma cells by flow cytometry in 11 out of 33 patients (33%) at time of relapse. Interestingly, CD20 expression at diagnosis was negative in 4 out of these 11 patients. This up-regulation in CD 20 expression was associated with clonal evolution in two patients (deletion-17 and complex hypo-diploid cytogenetic, respectively). Confirmatory immune-histochemical staining for CD20 was positive only in 2 of these 4 patients.

Conclusion: CD20 expression on plasma cells at time of relapse/progression can occur in one third of patients with multiple myeloma and may provide an additional therapeutic target. The cause of discrepancy between CD20 expression by flow cytometry and immune-histochemical staining is unclear and suggests that the two methods may be complementary for a comprehensive evaluation of CD20 expression in multiple myeloma. CD20 up-regulation in patients with relapsed/refractory myeloma who were previously CD20 negative at diagnosis may represent a secondary genetic event heralding a more aggressive disease. Future prospective studies evaluating CD20 expression on plasma cells at different stages of disease progression may optimize the timing for anti-CD20 therapy while harnessing the concept of colonogeneic myeloma stem cells.

246

Long-Term Outcomes of Patients With Systemic Light Chain Amyloidosis (AL) Treated at Diagnosis With Risk-Adapted Stem Cell Transplant and Consolidation With Novel Agents

Heather Landau [1], Daniel Fein [2], Hani Hassoun [3], Christina Bello [4], Joanne Chou [3], Sean Devlin [5], Sergio A. Giralt [6], Raymond Comenzo [7]. [1] TBD; [2] Medicine, SUNY Downstate, NY; [3] Memorial Sloan-Kettering Cancer Center; [4] Memorial Sloan-Kettering Cancer Center, New York, NY; [5] Department of Biostatistics, Memorial Sloan-Kettering Cancer Center, New York, NY; [6] Department of Medicine, Adult Bone Marrow Transplant Service, Memorial Sloan-Kettering Cancer Center, New York, NY; [7] Tufts Medical Center, Boston, MA

Background: AL is characterized by the production of monoclonal light chains which misfold, deposit in various organs, including the heart, and cause early death. High dose melphalan with SCT results in high hematologic response (HR) rates and is standard treatment for eligible patients. Achieving a CR to SCT results in extended EFS and OS. We have studied novel agents as consolidation following